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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,598	09/21/2006	Takashi Hashimoto	KAN-167NP	2574

23995 7590 10/14/2008

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EXAMINER	
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ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
10/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,598	HASHIMOTO ET AL.	
	Examiner	Art Unit	
	Wenpeng Chen	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-13, 20-22, 24-25* is/are rejected.

7)☒ Claim(s) *5 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Examiner's responses to Applicant's remark

1. Applicants' amendments filed on 8/11/2008 have been fully considered. The amendments overcome the followings set forth in the previous Office Action:

-- objection to abstract. (paragraph 1)

2. Applicants' arguments filed on 8/11/2008 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference to reasonably and properly meet the claimed limitation.

a. Applicants' argument -- An ordinarily skilled person would interpret the cited paragraphs (0053)-(0056) merely as meaning that AddOn dot patterns formed at different energy levels are used to create a printed text pattern. This is different from generating "inspection training data having N-dimensionality encoded data indicating a numerical value, which are obtained by digitizing the inspection watermark signal(s) . . ." in accordance with claim 1.

Examiner's response -- The Examiner likes to point out that because AddOn dot patterns are cited, all of the properties of the AddOn dot patterns shall be considered as part of the citation. Ikeda teaches in paragraph 28 that at least an embodiment is provided for setting an addition level of visually inconspicuous anti-forgery information (AddOn) in an image processing apparatus. Because the information is for watermarking and expressed as bits, it is digitized inspection watermark signal. As shown in Fig. 3 and discussed in paragraph 40, an AddOn unit 220 supplies given information to the image signal to form a pattern for anti-forgery tracking purpose. The information is provided without printing because it occurs before

providing information to Laser Drive 41. In paragraph 60, Ikeda teaches that the image forming apparatus 100 adds AddOn to a test pattern at a predetermined addition level **to form a test sample**, and transfers the test sample to the maintenance apparatus. More specifically, the control device 102 reads a test pattern, AddOn data, and addition level stored in the storage device 105 (500 to 502 in FIG. 5). In paragraph 64, Ikeda teaches that the control device 122 compares the received test sample with the AddOn pattern for comparison that is one of the reference data or the test pattern for comparison, and determines the lowest readable level as the most appropriate addition level for the image forming apparatus. The AddOn data on the test sample are inspection training data, because they used training the image forming apparatus to arrive the most appropriate addition level.

Applicants are reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claims. The Examiner is not limited to Applicants' definition which is not specifically set forth in the claims. In re Tanaka et al., 193 USPQ 139, (CCPA) 1977. As explain above, So the Examiner considers that Ikeda indeed teaches the feature ""inspection training data having N-dimensionality encoded data indicating a numerical value, which are obtained by digitizing the inspection watermark signal(s) . . ." within the broad meaning of the term.

b. Applicants' argument -- Since Ikeda does not disclose the "inspection training data" that is defined by claim 1, "a print quality judgment unit that judges watermark quality by comparing the watermark information" extracted from a signal embedded in an input image "with the inspection training data . . ." as recited in claim 1 is also clearly absent.

Examiner's response -- As explained above that Ikeda indeed discloses the "inspection training data" that is defined by claim 1. The argument is not persuasive.

c. Applicants' argument -- For Claim 20, the argument is the same as that given for Claim 1.

Examiner's response -- For Claim 20, the response is the same as that given above for Claim 1.

d. Applicants' argument -- Claim 9 depends from claim 1, and recites that "the inspection watermark signal generation unit embeds characteristics information indicating document image characteristics needed for tampering detection processing as the inspection watermark." Applicant's "tampering detection" is not the same as Ikeda's "anti-forgery" measures.

Examiner's response -- It is well known to an ordinarily skilled person in the art that forgery is a kind of tampering (altering improperly) action. Therefore, "anti-forgery" measure is for "tampering detection". Applicants are reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claims. So the Examiner considers "anti-forgery" to be Applicants' "tampering detection" within the broad meaning of the term. The Examiner is not limited to Applicants' definition which is not specifically set forth in the claims. In re Tanaka et al., 193 USPQ 139, (CCPA) 1977.

Claim Rejections - 35 USC § 102

3. Claims 1-4, 6-13, 20-22, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda et al (US 20020131629 listed in IDS).

a. Ikeda teaches a print medium quality adjustment system comprising an inspection watermark medium output device that outputs an inspection watermark medium to be used to inspect a print medium and a watermark quality inspection device that inspects the quality of a watermark in the print medium, wherein:

-- for Claim 1, (a) the inspection watermark medium output device (paragraph [0029]; image forming apparatus 100 of Fig. 1) includes

(1) an inspection watermark signal generation unit that generates a single inspection watermark signal or a plurality of inspection watermark signals to be used for inspection, (paragraphs [0040], [0053]-[0056])

- generates a watermark signal image by disposing the inspection watermark signal(s) in an arbitrary arrangement, (paragraphs [0053]-[0056])

- generates inspection training data having N-dimensionally encoded data indicating a numerical value, which are obtained by digitizing the inspection watermark signal(s), N being a positive integer equal to or greater than 2; (paragraphs [0053]-[0056]; Fig. 8 shows dot patterns which are 2D data, at least representing ID numbers.)

(2) an inspection medium output unit that outputs an inspection watermark medium to be used for inspection created by printing the inspection watermark signal(s) onto a medium; (paragraphs [0029], [0060]; output device 103 of Fig. 1) and

-- for Claim 1, (b) the watermark quality inspection device includes:

(1) an input unit that takes in the inspection watermark medium as a multi-value gradation input image; (paragraphs [0029], [0061]; reader 104 of Fig. 1)

(2) a signal detection unit that detects a signal embedded in the input image and extracts embedded watermark information from the signal; (paragraph [0063])

(3) a print quality judgment unit that judges watermark quality by comparing the watermark information with the inspection training data input thereto; (paragraphs [0064]-[0065])

(4) a print adjustment value output unit that outputs, based upon the results of the quality judgment, a print adjustment value to be used to improve the print quality. (paragraphs [0065]-[0068])

-- for Claim 2, an adjusted watermark medium output device that outputs an adjusted print medium based upon the print adjustment value input thereto, wherein: the adjusted watermark medium output device includes;

- a document image generation unit that creates a document image printed on a medium based upon document data; (paragraphs [0032]-[0039])

- a watermark information generation unit that N-dimensionally (N is a value equal to or greater than 2) encodes data indicating a numerical value, which are obtained by digitizing embed information to the embedded in a medium as a watermark signal; (paragraphs [0053]-[0056]; Fig. 8 shows 2D data, at least representing ID numbers.)

- a print adjustment value input unit to which the print adjustment value is input; (paragraphs [0065]-[0068])

- an adjusted watermark image generation unit that generates a watermark image based upon the document image and the watermark information by using the print adjustment value; (paragraphs [0065]-[0068])

- a medium output unit that outputs an adjusted watermark medium created by printing the watermark image onto a medium; (paragraphs [0065]-[0068, [0029], [0060]; output device 103 of Fig. 1)

-- for Claim 3, the print adjustment value output unit determines an adjustment value, which is dependent on the position assumed at the print medium, in correspondence to the difference between the inspection training data and the watermark signal detected by the signal detection unit and then output the adjustment value thus determined as the print adjustment value; (paragraphs [0053]- [0056]. [0065]-[0068]; The AddOn dots are added on positions having a well-defined positional relation. Therefore, an adjustment value is associated with the positions. The distance between the first-appearing AddOn dot and the next-appearing AddOn dot can be associated with numerical data or character data to express numerical information or character information.)

-- for Claim 4, the inspection training data are obtained by using at least part of the watermark information; (paragraphs [0053]- [0056]. [0065]-[0068])

-- for Claim 6,

- the inspection watermark medium output device generates a plurality of inspection watermark signals; (paragraphs [0040], [0053]-[0056])

- the print adjustment value output unit determines the print medium position-dependent adjustment value by executing tabulation processing on the plurality of inspection watermark

signals; (Fig. 7; paragraph [0063]; The watermarks correspond to ID stored in a table. The ID derived from the plurality of inspection watermark signals is compared with ID stored in a table.)

-- for Claim 7, the adjusted watermark medium output device is connected with the inspection watermark medium output device and the watermark quality inspection device so as to receive at least the watermark image via the network; (Fig. 1 and 5; paragraphs [0067]-[0068]; The watermark is received through the network NW110 of Fig. 1.)

-- for Claim 8, the adjusted watermark medium output device also receives the print adjustment value via the network; (Fig. 1 and 5; paragraphs [0067]-[0068]; The value is received through the network NW110 of Fig. 1.)

-- for Claim 9, wherein: the inspection watermark signal generation unit embeds characteristics information indicating document image characteristics needed for tampering detection processing as the inspection watermarking; (paragraphs [0002]-[0003], [0030], [0063]-[0064]; Forgery is a kind of tampering process. Identification number of image forming apparatus is a kind of document image characteristics, indicating how the image is formed. The watermarks are for anti-forgery which inherently requires tampering detection.)

-- for Claim 10, wherein: the print adjustment value output unit outputs as the print adjustment value a watermark printing parameter that satisfies a predetermined allowable recognition error rate by adopting a character recognition technology; (A character recognition technology uses image recognition, extraction, and identification. In paragraphs [0063]-[0065], Ikeda uses the above technology to select an adjusted level to satisfy a 100% identifiable rate of the extracted dots. Therefore, Ikeda also teaches this feature.)

-- for Claim 11, wherein: the inspection watermark signal that specify different dot arrangement; (paragraph 0053; FIG. 4 shows an example of AddOn dot pattern generated by the first embodiment. An identification number of an image forming apparatus is expressed by an arrangement of the AddOn dot pattern. For instance, encrypted data is expressed by the positional relation of the AddOn dots in the main-scanning direction. More specifically, the distance between the first-appearing AddOn dot and the next-appearing AddOn dot can be associated with numerical data or character data to express numerical information or character information. Each image forming apparatus has a unique identification number. Therefore, the dot arrangement is different for different apparatus.

-- for Claim 12, wherein: a printing parameter of the inspection watermark signal is determined based upon a change in the print density value for the watermark signal image; (Fig. 3; As shown a change in the print density value for the watermark signal image is performed at step 220. After that, printing parameters determined at steps 211 and 212 are determined.)

-- for Claim 13, wherein: a printing parameter of the inspection watermark signal is determined based upon a change in the arrangement of pixels constituting the watermark signal image; (Fig. 3; As shown a change in the print density value for the watermark signal image is performed at step 220. After that, printing parameters determined at steps 211 and 212 are determined. Figs. 4, 8-10 show that when the watermarking dots are changed, the printing parameters for each pixel associated or not associated with watermark dots varies with their positions.)

-- for Claim 40, wherein the inspection training data are electrical data that the inspection watermark signal generation unit obtains from the inspection watermark signal(s) entirely

electrically, without a printing step. (As shown in Fig. 3 and discussed in paragraph 40, an AddOn unit 220 supplies given information to the image signal to form a pattern for anti-forgery tracking purpose. The information is provided without printing because it occurs before providing information to Laser Drive 41.)

b. Ikeda further teaches a watermark quality inspection device that inspects a watermark quality of a watermark in a print medium by using an inspection watermark medium and inspection training data input thereto, comprising:

-- for Claim 20, an input unit that takes in the inspection watermark medium as a multi-value gradation input image; (paragraphs [0029], [0061]; reader 104 of Fig. 1)

-- for Claim 20, a signal detection unit that detects a signal embedded in the input image and extracts embedded watermark information from the signal; (paragraph [0063])

-- for Claim 20, a print quality judgment unit that judges the watermark quality by comparing the watermark information with the inspection training data input thereto; (paragraphs [0064]-[0065])

-- for Claim 20, a print adjustment value output unit that outputs, based upon the results of the quality judgment, a print adjustment value to be used to improve the print quality, (paragraphs [0065]-[0068]) wherein

- the inspection training data is obtained by N-dimensionally encoding data indicating a numerical value, which are obtained by digitizing a single inspection watermark signal or a plurality of inspection watermark signals, N being a positive integer equal to or greater than 2,

(paragraphs [0053]-[0056]; Fig. 8 shows dot patterns which are 2D data, at least representing ID numbers.)

- the inspection watermark medium is a medium with the inspection watermark signal(s) printed thereon; (paragraphs [0029], [0060])

-- for Claim 21, the print adjustment value output unit determines an adjustment value, which is dependent on the position assumed at the print medium, in correspondence to the difference between the inspection training data and the watermark signal detected by the signal detection unit and then output the adjustment value thus determined as the print adjustment value; (paragraphs [0053]- [0056]. [0065]- [0068]; The AddOn dots are added on positions having a well-defined positional relation. Therefore, an adjustment value is associated with the positions. The distance between the first-appearing AddOn dot and the next-appearing AddOn dot can be associated with numerical data or character data to express numerical information or character information.)

-- for Claim 22, the inspection training data are obtained by using at least part of the watermark information; (paragraphs [0053] - [0056]. [0065]- [0068])

-- for Claim 24,

- the inspection watermark medium output device generates a plurality of inspection watermark signals; (paragraphs [0040], [0053]-[0056])

- the print adjustment value output unit determines the print medium position-dependent adjustment value by executing tabulation processing on the plurality of inspection watermark signals; (Fig. 7; paragraph [0063]; The watermarks correspond to ID stored in a table. The ID derived from the plurality of inspection watermark signals is compared with ID stored in a table.)

-- for Claim 25, wherein: the print adjustment value output unit outputs as the print adjustment value a watermark printing parameter that satisfies a predetermined allowable recognition error rate by adopting a character recognition technology; (A character recognition technology uses image recognition, extraction, and identification. In paragraphs [0063]-[0065], Ikeda uses the above technology to select an adjusted level to satisfy a 100% identifiable rate of the extracted dots. Therefore, Ikeda also teaches this feature.)

-- for Claim 41, wherein the inspection training data are electrical data that the inspection watermark signal generation unit obtains from the inspection watermark signal(s) entirely electrically, without a printing step. (As shown in Fig. 3 and discussed in paragraph 40, an AddOn unit 220 supplies given information to the image signal to form a pattern for anti-forgery tracking purpose. The information is provided without printing because it occurs before providing information to Laser Drive 41.)

Allowable Subject Matter

4. Claims 5 and 23 are objected and would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the system of Claim 5 and the device of Claim 23, which specifically comprise the following limitations in combination with other recited limitations:

-- wherein: the print quality judgment unit *divides adjustment values*, each determined in correspondence to a specific position at the print medium, *into groups* each representing one of

an arbitrary number of areas, **sets an area with *an adjustment value equal to or greater than a predetermined threshold value* as a high-error area and designates the high-error area as a dummy watermark area with no information contained therein**.

Although Masahiko (JP 2003-209676 listed in IDS) divides pixels into areas for selecting locations for embedding information, the division is based on whether the area overlaps with a text area, not based on the adjustment value required by the claims.

Conclusion

5. THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). The Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 571-272-7431. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-8300 for After Final communications. TC 2600's customer service number is 571-272-2600.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

/Wenpeng Chen/
Primary Examiner, Art Unit 2624

October 15, 2008